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IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF :
WULF HAEUSSLER ET AL : ATTN: APPLICATION DIVISION
SERIAL NO: 09/890,864
FILED: August 7, 2001 :
FOR: METHOD FOR PRODUCING :
SOLAR CELLS AND THIN-FILM
SOLAR CELL

PRELIMINARY AMENDMENT

ASSISTANT COMMISSIONER FOR PATENTS
WASHINGTON, D.C. 20231

SIR:

Prior to a first examination on the merits, please amend the above-identified application as follows:

IN THE CLAIMS

Please cancel Claims 1-14 without prejudice.

Please add new Claims 15-28 as follows:

15. (New) A thin-film solar cell comprising:
an absorber layer, particularly of the CIS type;
at least one transparent window electrode disposed on a side on which light is incident, said window electrode comprising at least a first metal-base thin layer and at least one antireflective layer deposited on the side on which light is incident, situated opposite the absorber layer; and

at least one first highly refractive oxide or nitride layer between the absorber layer and the metallic layer of the window electrode.

16. (New) A thin-film solar cell according to Claim 15, wherein at least one of the dielectric layers is composed of zinc oxide.

17. (New) A thin-film solar cell according to Claim 15, wherein the metallic layer is composed of silver or silver alloy and the antireflective layer is a highly refractive oxide or nitride layer.

18. (New) A thin-film solar cell according to Claim 15, wherein the window electrode is formed by a succession of layers comprising at least one dielectric layer, said metallic layer, and another dielectric layer.

19. (New) A solar cell according to Claim 15, wherein the window electrode comprises in succession said first highly refractive layer, said first metallic layer, a second highly refractive layer, a second metallic layer, and said antireflective layer.

20. (New) A thin-film solar cell according to Claim 15, wherein at least one of the highly refractive layers is composed of one of the oxides ZnO, SnO₂, BiO_x, TiO₂, Al₂O₃ and/or one of the nitrides AlN, Si₃N₄.

21. (New) A thin-film solar cell according to Claim 15, further comprising a second electrode composed of at least one metallic layer and one highly refractive oxide or nitride layer.

22. (New) A thin-film solar cell according to Claim 15, wherein the metallic layer of the window electrode, particularly a silver layer, has a thickness of less than 20 nm, and the total thickness of the window electrode is less than 120 nm.

23. (New) A thin-film solar cell according to Claim 15, wherein a blocking layer is disposed between the metallic layer and one of the highly refractive layers.

24. (New) A process for manufacture of a thin-film solar cell comprising an absorber layer as well as at least one transparent window electrode dispersed on a side on which light is incident, with at least one metallic layer and one antireflective layer applied on the side on which light is incident, wherein it is manufactured in such a way that at least one highly refractive oxide or nitride layer is provided between the absorber layer and the metallic layer of the window electrode.

25. (New) A process according to Claim 24, wherein the window electrode is formed by a succession of layers with one thin metal-base layer between two highly refractive oxide or nitride layers.

26. (New) A process according to Claim 24, wherein the window electrode is formed by a succession of a first conductive dielectric or transparent layer, of the metal-base conductive layer, and of another conductive dielectric or transparent layer.

27. (New) A process according to Claim 24, wherein the solar cell comprises a second electrode also made with at least one thin metallic layer and one highly refractive oxide or nitride layer.

28. (New) A process according to Claim 24, wherein the solar cell is made with an absorber layer of chalcopyrite.

IN THE ABSTRACT OF THE DISCLOSURE

Please add the following new Abstract on a separate sheet:

ABSTRACT OF THE DISCLOSURE

A thin-film solar cell and a method of producing a thin-film solar cell. The thin-film solar cell includes an absorber layer and at least one transparent window electrode. The window electrode is produced with a first metal-based thin-film, which receives an anti-reflection treatment, at least on the side of which the light is incident. Further, at least one first highly light-refracting oxide or nitride layer is provided between the absorbent layer and the first metallic layer. As a result, conductivity of the electrode window is improved and, at the same time, a thickness compared to conductivity of the window electrode is reduced.

REMARKS

Favorable consideration of this application, as presently amended, is respectfully requested.

The present preliminary amendment is submitted to place the above-identified application in more proper format under United States practice.

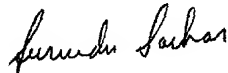
By the present preliminary amendment, Claims 1-14 are cancelled and new Claims 15-28 are presented for examination. New Claims 15-28 are believed to be self-evident from the original disclosure, including original Claims 1-15, and thus are not deemed to raise any issues of new matter.

A new Abstract is also submitted herein.

The present application is believed to be in condition for a full and thorough examination on the merits. An early and favorable consideration of the present application is hereby respectfully requested.

Respectfully submitted,

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IN THE CLAIMS

--Claims 1-14 (Cancelled).

Claims 15-28 (New).--

IN THE ABSTRACT

--Abstract (New).--